

A Guide to the Massachusetts...

# **Smoke & Carbon Monoxide**

## **Requirements**

...when Selling a One-  
or Two-Family Residence



**Department of Fire Services**

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## **M.G.L. C 148 S. 26F - THE LAW**

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Massachusetts General Law, chapter 148 section 26F mandates that upon the sale or transfer of certain homes, the seller must install approved smoke detectors. These requirements apply to residences that were built or modified prior to creation of the Massachusetts State Building Code (January 1, 1975). If a building has undergone renovation, addition or modification after Jan. 1, 1975, the date of the building permit determines the smoke detector requirements of the building code.

Although the transfer law applies to residences with five or less residential units, this pamphlet will focus only on one- and two-family homes.

## **VERIFICATION**

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After a successful inspection for smoke detector compliance, the local fire department will issue a Certificate of Compliance indicating that the residence meets the smoke detector requirements.

Although the law applies to homes built prior to the date of the building code (Jan. 1975), it is industry practice that most purchase and sales agreements, and many mortgage companies require that the seller, as a condition to sell or transfer, obtain a Certificate of Compliance issued by the local fire department, even if the home was permitted or modified after 1975.

## **SMOKE DETECTOR REQUIREMENTS**

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In general, the requirements for smoke detectors vary depending on when the residence was constructed. For example, some residences may require battery-powered detectors, others might need interconnected hard-wired detectors only or a combination of both. Others might need

interconnected hard-wired detectors with battery backup. On April 5, 2010, a significant change in the Massachusetts' smoke detector requirements will become effective for all residences subject to MGL c. 148, s. 26F upon sale or transfer. Now, all smoke detectors installed within 20 feet of kitchens or bathrooms (containing a bathtub or shower) will be required to be photoelectric detectors. The risk of nuisance alarms from steam and cooking is lower with photoelectric only detectors. All installed smoke detectors outside of 20 feet of kitchens or bathrooms (containing a bathtub or shower) must utilize either:

- **A DUAL detector (containing both ionization and photoelectric technologies); OR**
- **Two separate detectors (one photoelectric and one ionization).**

In residences not subject to MGL c. 148, s. 26F (built after Jan. 1975), the smoke detector upgrade is recommended, but is not required by law.

## **PHOTOELECTRIC VS. IONIZATION TECHNOLOGIES**

### **Ionization smoke detectors:**

- Use radiation to detect smoke.
- More effective in detecting flaming fires.
- Increased risk of nuisance alarms caused by steam or cooking smoke.

### **Photoelectric smoke detectors:**

- Use light to detect smoke.
- More effective in detecting smoldering fires, which have been attributed to more fires involving death.
- Low voltage or wireless low voltage systems only use photoelectric detectors.

## **CARBON MONOXIDE ALARMS**

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Massachusetts General Law, chapter 148 section 26F½ and 527 CMR 31 mandates that upon the sale or transfer of any residence, the local fire department must inspect the residence for carbon monoxide alarm compliance. After a successful inspection, the local fire department will issue a Certificate of Compliance indicating that the residence meets the carbon monoxide alarm requirements.

## **CARBON MONOXIDE ALARM REQUIREMENTS**

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Since March 31, 2006, carbon monoxide alarms have been required in all residences that have either: fossil fuel burning equipment or an attached enclosed garage. This law applied to all such residences whether or not the residence is being sold or transferred.

## **WHAT IS FOSSIL FUEL BURNING EQUIPMENT?**

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Fossil fuel burning equipment is any device, apparatus or appliance that is designed or used to consume fuel of any kind which emits carbon monoxide as a by-product of combustion. Some examples of a fossil fuel burning equipment include: water heaters, oil or gas furnaces, wood or gas fireplaces, wood pellet stoves, gas clothes dryers, or gas cooking stoves.

## **HOW WILL I KNOW WHAT I NEED?**

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The word “typical” is used in the following guidelines only for purposes of illustration. The actual requirements may depend on when the building permit for the residence was actually applied for and if there have been any major renovations, additions or modifications. It is best to check with your local fire department for detailed guidance.

**Typical one- and two-family residences  
built before January 1, 1975:**

- **Smoke detectors are required as follows:**
  - On every habitable level of the residence.
  - On the ceiling at the base of each stairway.
  - On the ceiling outside of each separate sleeping area.
  - The smoke detectors may either be battery powered, hardwired or a combination of the two.
  - If the smoke detector is located within 20 feet of a kitchen or bathroom (containing a bathtub or shower), the smoke detector will be required to be a photoelectric detector.
  - If the smoke detector is outside of 20 feet of a kitchen or a bathroom (containing a bathtub or shower) you must utilize either:
    - A dual detector (containing both ionization and photoelectric technologies); **OR**
    - Two separate detectors (one photoelectric and one ionization).
- **Low voltage household warning systems are exempt from the dual detection requirement.**
- **Carbon monoxide alarms are required as follows:**
  - On every level of the residence, including habitable portions of basements and attics and must be located within 10 feet of each bedroom door.
  - Combination detectors (photoelectric smoke and carbon monoxide detector) may be used if the detector is within 20 feet of a kitchen or bathroom (containing a bathtub or shower).
  - Combination detectors (ionization smoke and carbon monoxide detector) may be used if the detector is outside of 20 feet of a kitchen or

bathroom (containing a bathtub or shower).

- May be either: battery powered, plug-in with battery backup, hardwired with battery backup, or system type.
- Follow the manufacturer's instructions for placement.

**Typical one- and two-family residences  
permitted between 1975 and August 27, 1997:**

- **Smoke detectors are required as follows:**
  - One smoke detector on every habitable level of the residence.
  - One smoke detector on the ceiling at the base of each stairway.
  - One smoke detector on the ceiling outside of each separate sleeping area.
  - A minimum of one smoke detector must be installed for every 1,200 square feet of living space per level.
  - Must be hardwired interconnected smoke detectors.
- **Carbon monoxide alarms are required as follows:**
  - On every level of the residence, including habitable portions of basements and attics and must be located within 10 feet of each bedroom door.
  - Combination detectors (photoelectric smoke and carbon monoxide detector) may be used anywhere.
  - Combination detectors (ionization smoke and carbon monoxide detector) may be used if the detector is outside of 20 feet of a kitchen or bathroom (containing a bathtub or shower).
  - May be either: battery powered, plug-in with battery backup, hardwired with battery backup, or system type.

- Follow the manufacturer's instructions for placement.

**Typical one- and two-family residences permitted after August 27, 1997:**

- **Smoke detectors are required as follows:**
  - One smoke detector on every habitable level of the residence.
  - One smoke detector at the base of each stairway.
  - One smoke detector outside of each separate sleeping area.
  - One smoke detector inside every bedroom.
  - A minimum of one smoke detector must be installed for every 1,200 square feet of living space per level.
  - Must be hardwired and interconnected smoke detectors with battery backup.
  - If the smoke detector is within 20 feet of a kitchen or bathroom (containing a bathtub or shower), the smoke detector is required to be a photoelectric detector.
- **Carbon monoxide alarms are required as follows:**
  - On every level of the residence, including habitable portions of basements and attics and must be located within 10 feet of each bedroom door.
  - Combination detectors (photoelectric smoke and carbon monoxide detector) may be used anywhere.
  - Combination detectors (ionization smoke and carbon monoxide detector) may be used if the detector is outside of 20 feet of a kitchen or bathroom (containing a bathtub or shower).
  - May be either: battery powered, plug-in with battery backup, hardwired with battery backup, or system type.

- Follow the manufacturer's instructions for placement.

**Typical one- and two-family residences permitted on or after January 1, 2008:**

- **Smoke detectors are required as follows:**
  - One smoke detector on every habitable level of the residence.
  - One smoke detector at the base of each stairway.
  - One smoke detector outside of each separate sleeping area.
  - One smoke detector inside every bedroom.
  - A minimum of one smoke detector must be installed for every 1,200 square feet of living space per level.
  - Must be hardwired and interconnected smoke detectors with battery backup.
  - If the smoke detector is within 20 feet of a kitchen or bathroom (containing a bathtub or shower), the smoke detector is required to be a photoelectric detector.
  - If the smoke detector is outside of 20 feet of a kitchen or a bathroom (containing a bathtub or shower), the smoke detector is required to be either a photoelectric detector or a dual detector (containing both ionization and photoelectric technologies).
- **Carbon monoxide alarms are required as follows:**
  - On every level of the residence, including habitable portions of basements and attics and located within 10 feet of each bedroom door.
  - Combination detectors (photoelectric smoke and carbon monoxide detector) may be used.
  - **Must be hardwired and interconnected with battery backup.** (May be separately wired from the existing smoke detection system.)

**\*\* Low voltage systems will require the addition of horns for alarm notification in all areas of the structure.**



- Follow the manufacturer's instructions for placement.
- **Heat detectors are required as follows:**
  - Must have a single heat detector in any garage attached to or under the residence.
  - Must be hardwired and interconnected with or without battery backup to the existing smoke detection system.
  - Heat detectors are not required in older homes unless renovation, addition or modification occurs after Jan. 1, 2008.

## **HOW WILL I GET A CERTIFICATE OF COMPLIANCE?**

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### **After you have a closing date:**

- Contact the local fire department to schedule an inspection of your smoke and carbon monoxide detectors right away. Don't wait until the last minute!
- Fees are determined by each city/town.

### **Prior to the arrival of the fire department:**

- **Make sure that your posted street number is visible from the street (MGL c.148 § 59);**
- **Make sure that you have the proper type of detectors.**
  - The local fire department may require that they be taken down for compliance verification.
  - Make sure that all detectors are installed in the proper locations.
  - Make sure that all detectors are working properly.
- **After passing the inspection, the local fire department will issue your Certificate of Compliance.**

- This document will probably be required at the closing and is only valid for 60 days.

## **HOW DO I KNOW WHICH KIND OF SMOKE DETECTOR I HAVE?**

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A new detector should be marked on the outside of the package to indicate if it uses ionization or photoelectric technology.

For older or existing detectors you will need to remove the smoke detector and look on the backside.

- The date of manufacture should be on the back; if not, the detector is most likely outdated and should be replaced to comply with the regulation.
- It is an ionization smoke detector if the word "AMERICIUM" or the following symbol is on the back:



## **CAN I STILL HAVE IONIZATION SMOKE DETECTORS IF I AM NOT SELLING OR TRANSFERRING MY HOME?**

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- Yes. The requirements in the new regulation only apply upon the sale or transfer of the residence.
- Even though the technology has changed, ionization detectors are still reliable.
- However, the risk of nuisance alarms from steam and cooking is higher with ionization detectors, particularly if located within 20 ft of a kitchen or bathroom.

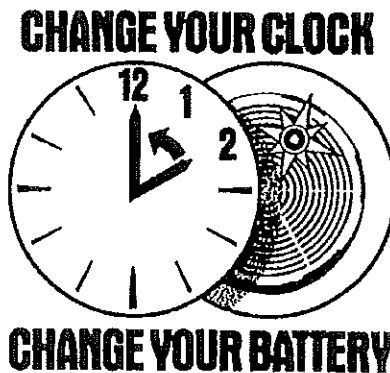
## **ARE COMBINATION CARBON MONOXIDE & SMOKE DETECTORS PERMITTED?**

- Yes. Combination carbon monoxide and smoke detectors are permitted.
- They must have both a tone and simulated voice alarm to distinguish the type of emergency. Carbon monoxide detectors are required regardless of a sale or transfer.
- Combination ionization and CO detectors cannot be used within 20 ft of a kitchen or bathroom

## **ARE THERE OTHER RECOMMENDATIONS?**

The State Fire Marshal's Office recommends:

- Test your smoke and CO detectors monthly and replace the batteries twice a year.  
**REMEMBER**, when you change the clocks, change the batteries.
  - Unless otherwise recommended by the manufacturer's published instructions, no smoke detectors (battery operated or hard-wired smoke detectors only) shall remain in service after 10 years from the date of manufacture.





February 2010

# **CHICOPEE FIRE DEPARTMENT**

## **SMOKE DETECTOR GUIDELINES**

2010

### **NEW CONSTRUCTION of 1 and 2 DWELLING UNITS and ADDITIONS and ALTERATIONS of EXISTING STRUCTURES**

1. All detectors are to be hardwired, interconnected, with a secondary source of power.
2. Detectors are to be located;
  - ❖ In all bedrooms
  - ❖ Outside each separate sleeping area
  - ❖ At the base of the cellar stairs
  - ❖ At base of stairs leading to the floor above
  - ❖ On each level of habitation

NOTE: A smoke detector located within 20 feet of a kitchen or bathroom containing a tub or shower is required to be a photoelectric smoke detector.

### **EXISTING STRUCTURES**

#### **Single Dwelling Unit**

1. Detectors may be battery operated or electric depending on when the building was constructed. If the building has hardwired detectors, they must be maintained. Battery operated detectors may be used to supplement the existing hardwired system.
  2. Detectors are to be located;
    - ❖ Outside each separate sleeping area \*\*
    - ❖ At the base of the cellar stairs
    - ❖ At the base of the stairs leading to the floor above
    - ❖ On each level of habitation
- \*\* If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

## Two Dwelling Units

1. The requirement for an existing 2 – unit dwelling is the same as an existing 1 – unit dwelling, with one exception, if the building has enclosed rear porches that are used as a common means of egress from the building detection is required in this area.

2. Buildings **without** enclosed porches detectors are to be located;

- ❖ Outside each separate sleeping area\*\*
- ❖ At the base of the cellar stairs
- ❖ At the base of the stairs leading to the floor above
- ❖ On each level of habitation

\*\* If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

3. Buildings **with** enclosed porches detectors are to be located;

- ❖ Heat detectors are to be located on each porch and they are to be interconnected with hardwired smoke detectors in the front or side entrance and basement. The heat detectors must be equipped with a sounding device or horn strobes will be required.

### AND

Battery operated detectors will be allowed in each dwelling unit at the following locations;

- ❖ Outside each separate sleeping area\*\*
- ❖ At the base of the stairs leading to the floor above
- ❖ On each level of habitation

\*\* If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

## 3 to 5 Dwelling Units

1. Smoke detectors are required to be hardwired and interconnected in common hallways, stairways, and cellar.
2. If the rear porches and their attached stairways are enclosed and are a common means of egress for more than 1 dwelling unit heat detectors are required to be interconnected with the smoke detectors in the common areas. The heat detectors must be equipped with a sounding device or horn strobes will be required. See definition of enclosed porch.

3. Battery operated smoke detectors are allowed in each dwelling unit in the following locations;

- ❖ Outside each separate sleeping area\*\*
- ❖ At the base of the stairs leading to the floor above
- ❖ On each level of habitation

4. Owners meter required.

\*\* If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 5 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

## 6 – 12 Dwelling Units

1. Buildings have 6 or more dwelling units and having common hallways, cellars, or stairways are required to have a low voltage (24 volt) fire protection system which includes an annunciator panel at grade level, horn strobes, and manual pull stations within 5 feet of all exits.
2. Fire protection system detectors are required to be hardwired, interconnected, and have a secondary source of power (24 volt batteries located in the annunciator panel) in common hallways, stairways, cellar and if the building has enclosed porches, heat detectors on porches. See definition of enclosed porch.
3. Because low voltage smoke and heat detectors are not equipped with sounding devices, horn strobes are a required part of the fire protection system. A horn strobe should be located in the cellar, and on alternating floors of the front and rear exits. Example: cellar, and 1<sup>st</sup> and 3<sup>rd</sup> floor front exit and 2<sup>nd</sup> and 4<sup>th</sup> floor rear exit. The rear exit may be an open porch, we require that horn strobe(s) be located on open porches.
4. Battery operated smoke detectors are allowed in the apartments. However, if the units are equipped with hardwired detectors they must be maintained and the unit supplemented with battery operated detectors. Smoke detectors are to be located;
  - ❖ Outside each separate sleeping area\*\*
  - ❖ At the base of the stairs leading to the floor above
  - ❖ On each level of habitation

\*\* If the bedroom door is located in the kitchen, the smoke detector is to be located in the bedroom. It is preferred that the smoke detector be mounted on the ceiling within 6 feet of the doorway but wall mounted smoke detectors are acceptable. See definition of wall mounted detectors.

**Refinancing of Property:** If the building was constructed after January 1975, the structure was built to a State Building Code standard. The **original** owner is required to maintain the fire alarm system that was required when the building was constructed. This may be a 110 – volt hardwired interconnected smoke detector system or it may be a low voltage system, it depends on the year the building was constructed. This applies only to the **original** owner of the property. If the property was built before State Building Code standards (before 1975) the **original** owners were required to up-grade the fire protection system as required by M.G.L. Ch148 sec26C, the City of Chicopee accepted this section of M.G.L. in December 1985. However, prior to the property being **sold or transferred**, the building must comply with the requirements listed above regardless of when it was built. This is a recent Office of the State Fire Marshal opinion.

## 13 or More Dwelling Units

The fire protection system for properties of this size is the same as for buildings that have 6 to 12 unit dwellings, with one exception. Buildings of this size are **required to have automatic fire department notification**. See definition of automatic fire department notification.

### **Common scenarios**

A **two story** 3 dwelling unit building with two front doors. One door only accesses the first floor unit. The other front door accesses a stairway that leads to the 2<sup>nd</sup> and 3<sup>rd</sup> units. Hardwired interconnected smoke detectors would be required: in the cellar, in the first floor unit living area (this is the only way they would be notified of a fire anywhere else in the building), and the common stairway for the 2<sup>nd</sup> and 3<sup>rd</sup> units. If there are no doors or obstructions between the front door and the top of the stairs for the 2<sup>nd</sup> and 3<sup>rd</sup> units the detector at the base of those stairs may be eliminated. If this was a 3 story building a hardwired interconnected smoke detector would be added to the third floor landing.

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A building having business(es) on the first floor and dwelling unit(s) above or attached. The first floor business(es) is required to have hardwired heat detector(s), the basement(s) must have a hardwired smoke detector and a hardwired smoke detector must be located either in the apartment or in an enclosed exit way for the apartment. These detectors must be interconnected.

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An existing two story, 2 dwelling unit building with one front door and an open porch and stairway in the rear that is used as an exit for both units. This building is allowed to be equipped with battery operated smoke detectors throughout. However, this same building but the rear porches and stairway are enclosed. This building would require hardwired heat detectors on each enclosed rear porch interconnected to hardwired smoke detectors in the cellar, and front entrance (1<sup>st</sup> and 2<sup>nd</sup> floors).

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